

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of: Neil Hepburn and Steven R. Fipke  
Serial No.: 10/767,656  
Filed: January 29, 2004  
Entitled: SEALED BRANCH WELLBORE  
TRANSITION JOINT  
Group Art Unit: 3672  
Examiner: N. Coy

**DECLARATION OF PRIOR INVENTION  
UNDER RULE 131**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

This declaration is to establish completion of the invention in the above-identified patent application in the United States, at a date prior to December 4, 2003, the filing date of United States Patent No. 6,994,118 (Kiest). This declaration is submitted accompanying a response to the Office Action dated August 29, 2006.

The persons making this declaration are the applicants, Neil Hepburn and Steven R. Fipke.

To establish the date of completion of the invention of this application and diligence in reducing the invention to practice, the following attached exhibits are submitted as evidence:

Exhibit A - A copy of an Invention Disclosure submitted by the inventors, Neil Hepburn and Steven R. Fipke, to the assignee of the present application, Halliburton Energy Services, Inc.

Exhibit B - A copy of an e-mail message between the inventors and a patent attorney.

Exhibit C - A copy of a presentation explaining details of the invention.

All dates originally shown on the Exhibit A have been deleted by placing "\*\*\*DATE\*\*" over them. All such dates are prior to the Kiest patent filing date, that is, prior to December 4, 2003.

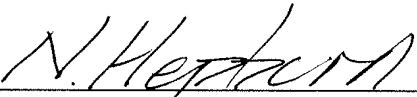
Additionally, the undersigned applicants hereby declare that:

1. We conceived the invention of the present application prior to the Kiest patent filing date;
2. As shown by the attached Exhibit A, we possessed a complete understanding of the invention, including the manner of making and using the invention, prior to the Kiest patent filing date;
3. Diligence was exercised in preparing and filing the present application from a time at least prior to the Kiest patent filing date and until filing of the patent application on January 29, 2004;

4. As shown by the attached Exhibit B, dated November 19, 2003, preparation of the present patent application was in process prior to the Kiest patent filing date; and

5. As shown by the attached Exhibit C, which was transmitted to the patent attorney on or about December 17, 2003 to assist in preparation of the patent application, ongoing efforts were being made in this time period to reduce the invention to practice.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
\_\_\_\_\_  
NEIL HEPBURN

Dated: 16TH OCTOBER 2006

\_\_\_\_\_  
STEVEN R. FIPKE

Dated: \_\_\_\_\_

## HALLIBURTON ENERGY SERVICES, INC.

## INVENTION DISCLOSURE

**RECEIVED****\*\*DATE\*\***Please fill in all blanks using ink or typewriting.  
Use "not applicable" or "none" where appropriate.

LEGAL-I.P. SECTION

DALLAS

TITLE OF INVENTION Oriented, pre-milled transition joint for Level 3 multilateral wells including low-pressure, swelling rubber seal for sand exclusion through the junction

## A. The Inventor(s):

(1) Name Neil Hepburn U.S. Citizen Yes X No

First Middle Last

Social Security Number N/A (Not Canadian Resident)Residence 383 Burton Road Edmonton Alberta T6R 2J5  
Street Address City State Zip Code(2) Name Steven R. Fipke U.S. Citizen Yes x No

First Middle Last

Social Security Number 644 415 887Residence 5105 52 avenue Ponoka Alberta T4J 1H5  
Street Address City State Zip Code

If there are more than two joint inventors, please attach an additional sheet giving the above information.

## B. Information about making the invention:

(1) The invention was first thought of on or about \*\*DATE\*\*(2) The invention was first explained to Steven Fipke

Name of Person or Persons

on or about \*\*DATE\*\*(3) The first drawing of the invention was made on or about \*\*DATE\*\*(4) The first written description of the invention was made on or about \*\*DATE\*\*

## C. Information about use of the invention:

(1) A device, product or process embodying or using the invention has been made or used and tested. Yes x No(2) A device, product or process embodying or using the invention has been sold, used in making a product or performing a service that has been sold or information concerning same has been communicated to a customer or potential customer. Yes x No(3) A technical paper, article, advertisement, other printed document or verbal communication describing the invention has been distributed or communicated outside HES.  
Yes x No

If the answers to any of these questions is "yes", give applicable dates.

In case of sales or communications to a customer or potential customer give the name of the customer.

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EXHIBIT A

D. Prior Art: (If possible and as appropriate, furnish copies and point out relevant portions)

- (1) Identify the most closely related device, product or process existing before the invention:  
a) in HES; b) outside HES. a) MACH-3 transition joint b) swelling rubber industrial products
- (2) Identify the published description(s) in a technical paper, advertisement, patent, etc. of a device, product or process closest to the invention SPE 74496 describes the MACH-3 system in detail without any seal for the junction
- (3) Identify any persons apt to be involved with the patent application having knowledge of additional information relevant to any of the above answers. Nick Nistor and Henry Stoltz

E. Invention Disclosure: (Attach additional sheets as necessary)

- (1) Purpose of Invention: (Explain the results sought to be accomplished, difficulties to be overcome or eliminated and advantages to be gained by invention.)  
This product is designed to seal to a Level 3 multilateral junction on the transition joint that connects the lateral liner/casing to the mainbore casing. There is a problem in the industry of sand being drawn into a Level 3 multilateral junction, suggesting that a low pressure seal or barrier is required to prevent the sand from flowing into the well bore. The seal is difficult to design because it must fit inside the main casing, but expand to seal the junction. A swelling rubber coating for the MACH-3 transition joint could be an ideal design for this type of well.
- (2) Brief Description of the Invention: (Describe the machine, circuit, method, product or composition of matter that is the subject of this Certificate. Attach sketches or diagrams as necessary. Be sure to describe the preferred form of the invention but identify alternate forms where appropriate.)  
The transition joint is basically a tubular that fits inside the mainbore casing and extends out into the lateral wellbore. One side of this tubular is cut away to half its full diameter for a length of about 18 feet. This cut-away section is oriented to face the mainbore casing and thereby provide access to the lower mainbore. The section of the transition joint that is not cut away provides the strength to hold the liner in place and gives structural support to the formation rock around the multilateral junction. By coating the transition joint with a rubber that slowly swells in the presence of wellbore fluids, the junction could be sealed against the mainbore casing and formation to prevent sand influx.
- (3) Distinctive Features: (How does the disclosed invention differ from earlier attempts to solve the same problem?)  
Many multilateral service providers offer a Level 3 junction system, but none of these competitors have developed a cost-effective way to seal the junction to exclude sand. Several systems offer a mechanical seal to close the junction. The swelling rubber seal concept is unique to the marketplace.

F. Assignment:

In accordance with the provisions of my (our) Employee Invention and Assignment Agreement, I (we) hereby assign the entire right, title and interest in and to the herein described inventions, discoveries, and conceptions to Halliburton Energy Services, Inc.

Signature(s) N. Heston

of

Inventor(s) Henry Stoltz

**\*\*DATE\*\***

Date Signed

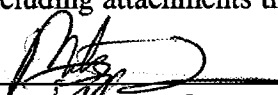
**\*\*DATE\*\***

Date Signed

Witnesses:

Each of the undersigned witnesses declares that he has read, understood, and signed this Certificate of Invention, including attachments thereto, on the date following his signature.

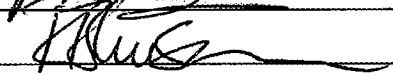
Witness



**\*\*DATE\*\***

Date Signed

Witness



**\*\*DATE\*\***

Date Signed

**Subject:** Patent application for Sealed Branch Wellbore Transition Joint

**Date:** Wednesday, November 19, 2003 1:59 PM

**From:** Marlin Smith <marlinsmith@earthlink.net>

**To:** Neil Hepburn <Neil.Hepburn@Halliburton.com>, Steven Fipke  
<Steven.Fipke@halliburton.com>

Gents,

I am preparing the patent application for your invention, a Sealed Branch Wellbore Transition Joint (Halliburton docket no. 2003-IP-010320 U1 USA).

I see in the invention disclosure you prepared for the invention that there is a drawing of the invention. I did not receive this drawing. Would you please send this drawing to me (preferably by e-mail)?

Also in the invention disclosure, you stated that the most closely related device outside HES is "swelling rubber industrial products." Do you have an example of such a swelling rubber industrial product?

What swelling rubber would you use with your invention? What wellbore fluids would cause the rubber to swell?

Thanks,

--

Marlin R. Smith

**KONNEKER & SMITH, P.C.**

660 N. Central Expwy., Suite 230

Plano, TX 75074

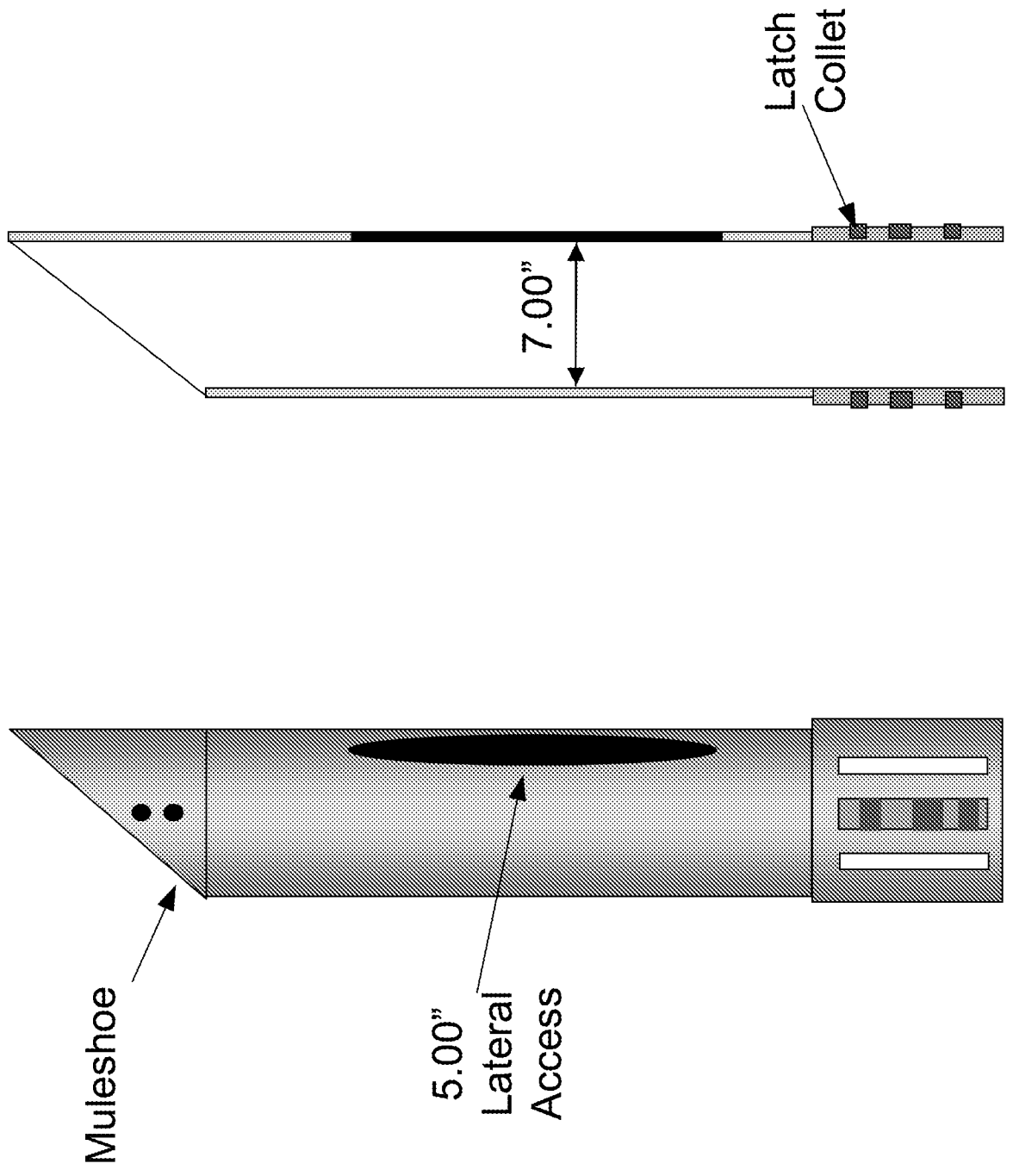
972-516-0030 (phone)

972-516-0608 (fax)

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***EXHIBIT B***

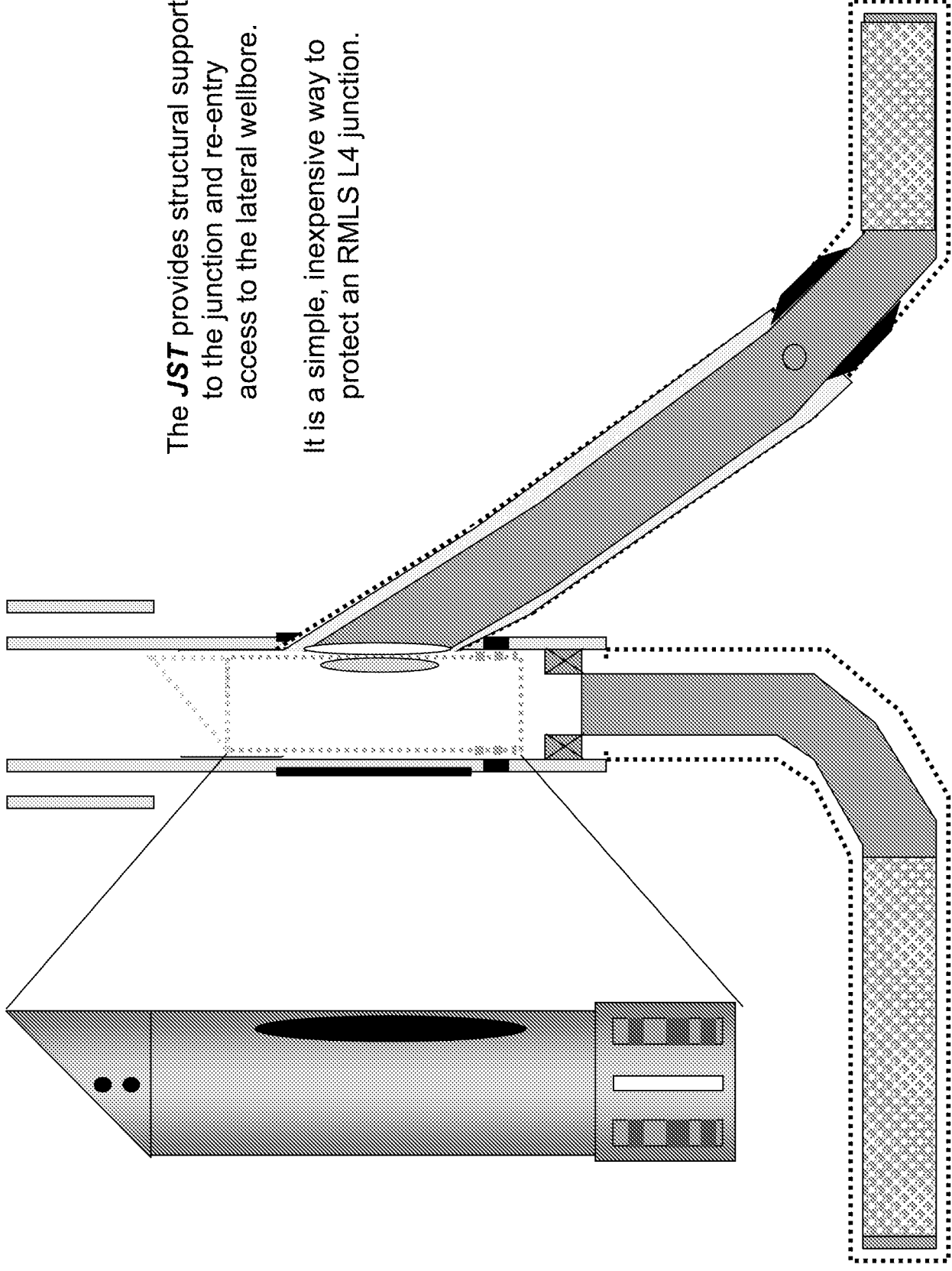
# Junction Support Tool (JST)



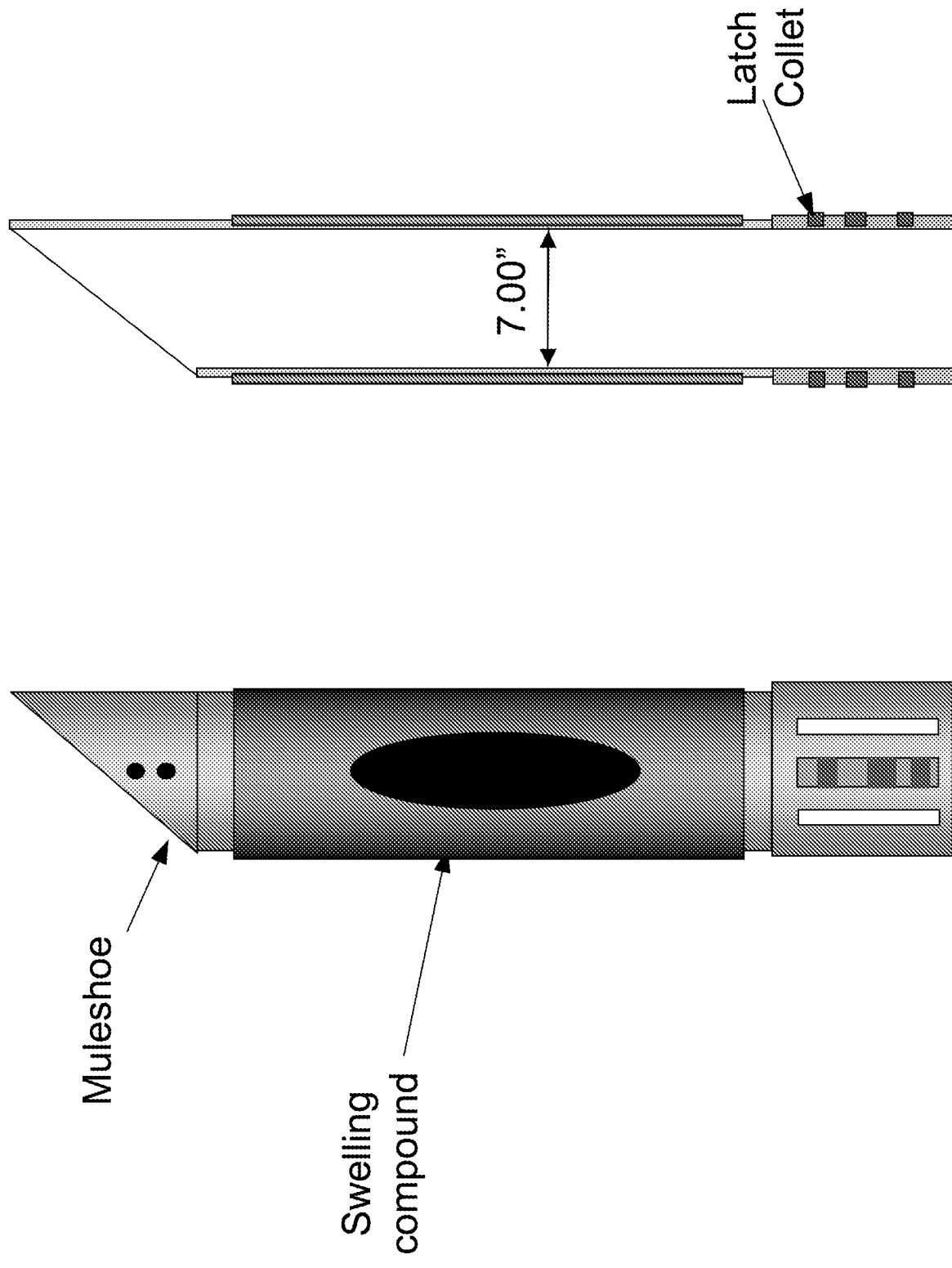


The **JST** provides structural support to the junction and re-entry access to the lateral wellbore.

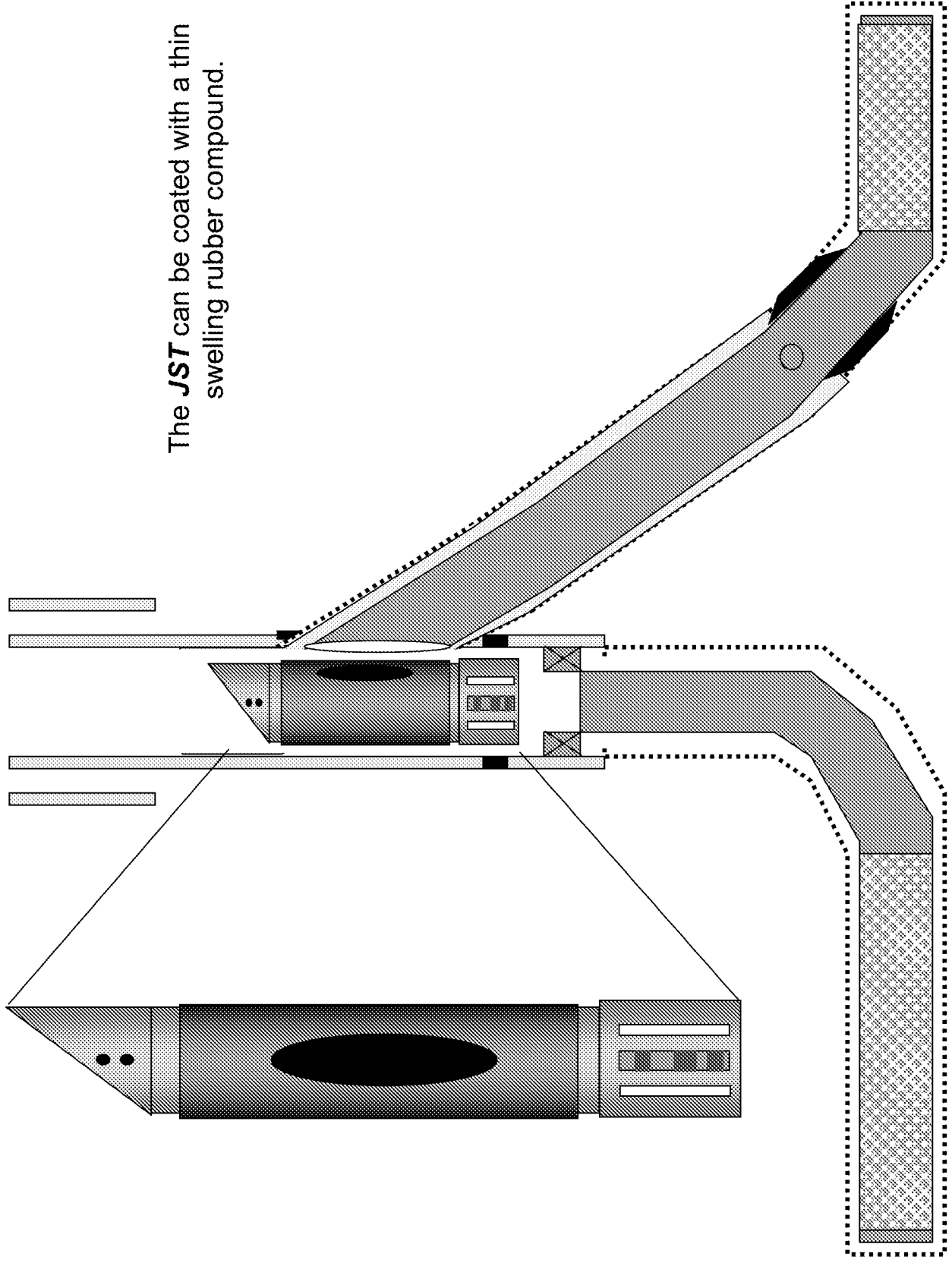
It is a simple, inexpensive way to protect an RMLS L4 junction.

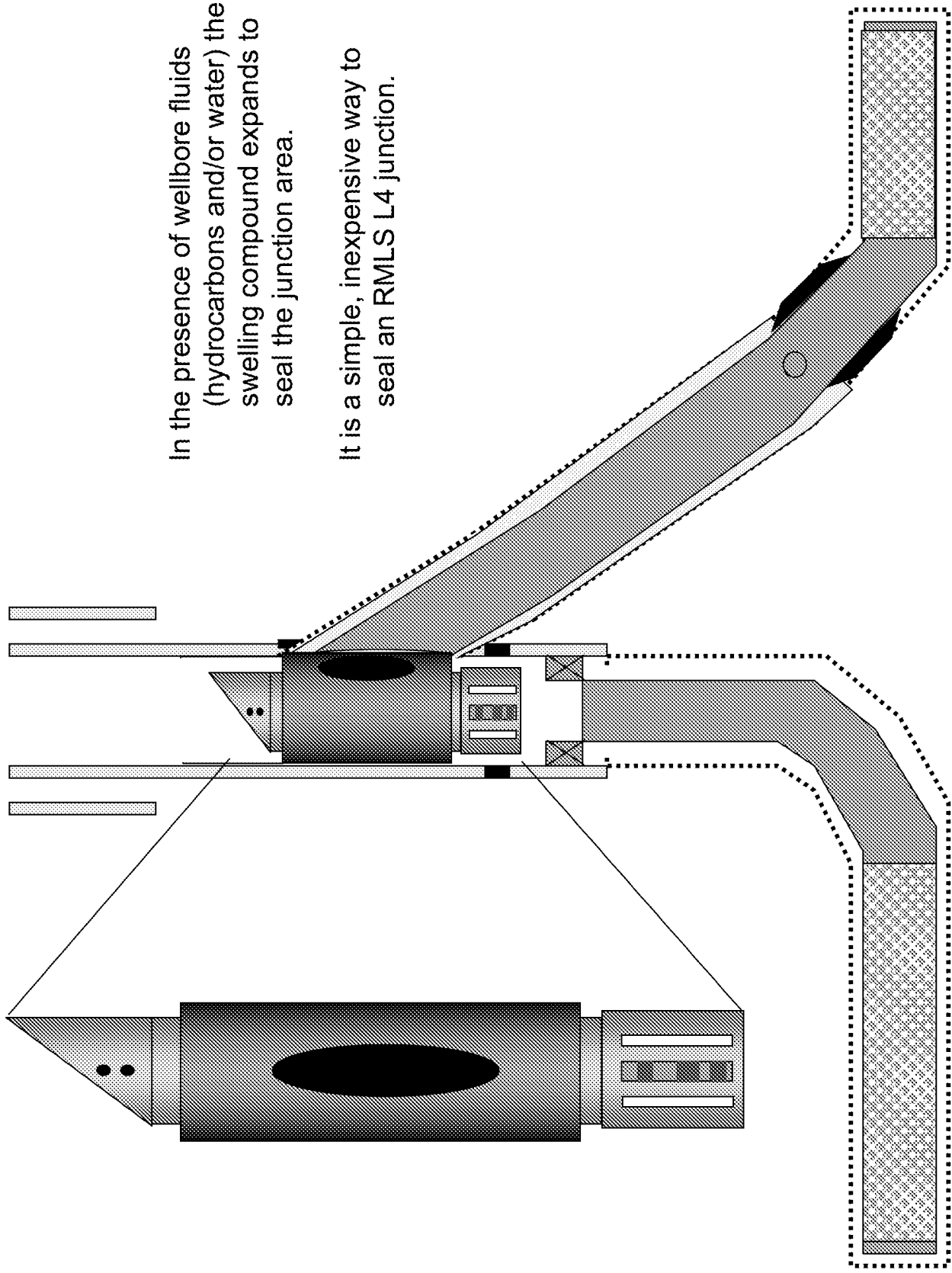


# Junction Support Tool (JST) c/w Swelling Seal



The *JST* can be coated with a thin swelling rubber compound.





In the presence of wellbore fluids (hydrocarbons and/or water) the swelling compound expands to seal the junction area.

It is a simple, inexpensive way to seal an RMLS L4 junction.

001-972-516 -0608 fax.

PATENT  
Attorney Docket No.: 2003-IP-010320 U1 USA

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\_\_\_\_\_  
NEIL HEPBURN

Dated: \_\_\_\_\_

\_\_\_\_\_  
STEVEN R. FIPKE

Dated: 13 - oct - 06.

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(1) Name Neil Hepburn U.S. Citizen Yes X No

First Middle Last

Social Security Number N/A (Not Canadian Resident)Residence 383 Burton Road Edmonton Alberta T6R 2J5  
Street Address City State Zip Code(2) Name Steven R. Fipke U.S. Citizen Yes x No

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Social Security Number 644 415 887Residence 5105 52 avenue Ponoka Alberta T4J 1H5  
Street Address City State Zip Code

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Signature(s) N. Heston

of

Inventor(s) John J. Jones

**\*\*DATE\*\***

Date Signed

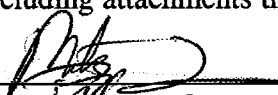
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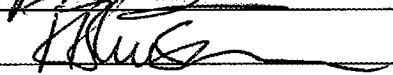
Witness



**\*\*DATE\*\***

Date Signed

Witness



**\*\*DATE\*\***

Date Signed

**Subject:** Patent application for Sealed Branch Wellbore Transition Joint

**Date:** Wednesday, November 19, 2003 1:59 PM

**From:** Marlin Smith <marlinsmith@earthlink.net>

**To:** Neil Hepburn <Neil.Hepburn@Halliburton.com>, Steven Fipke  
<Steven.Fipke@halliburton.com>

Gents,

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Thanks,

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Marlin R. Smith

**KONNEKER & SMITH, P.C.**

660 N. Central Expwy., Suite 230

Plano, TX 75074

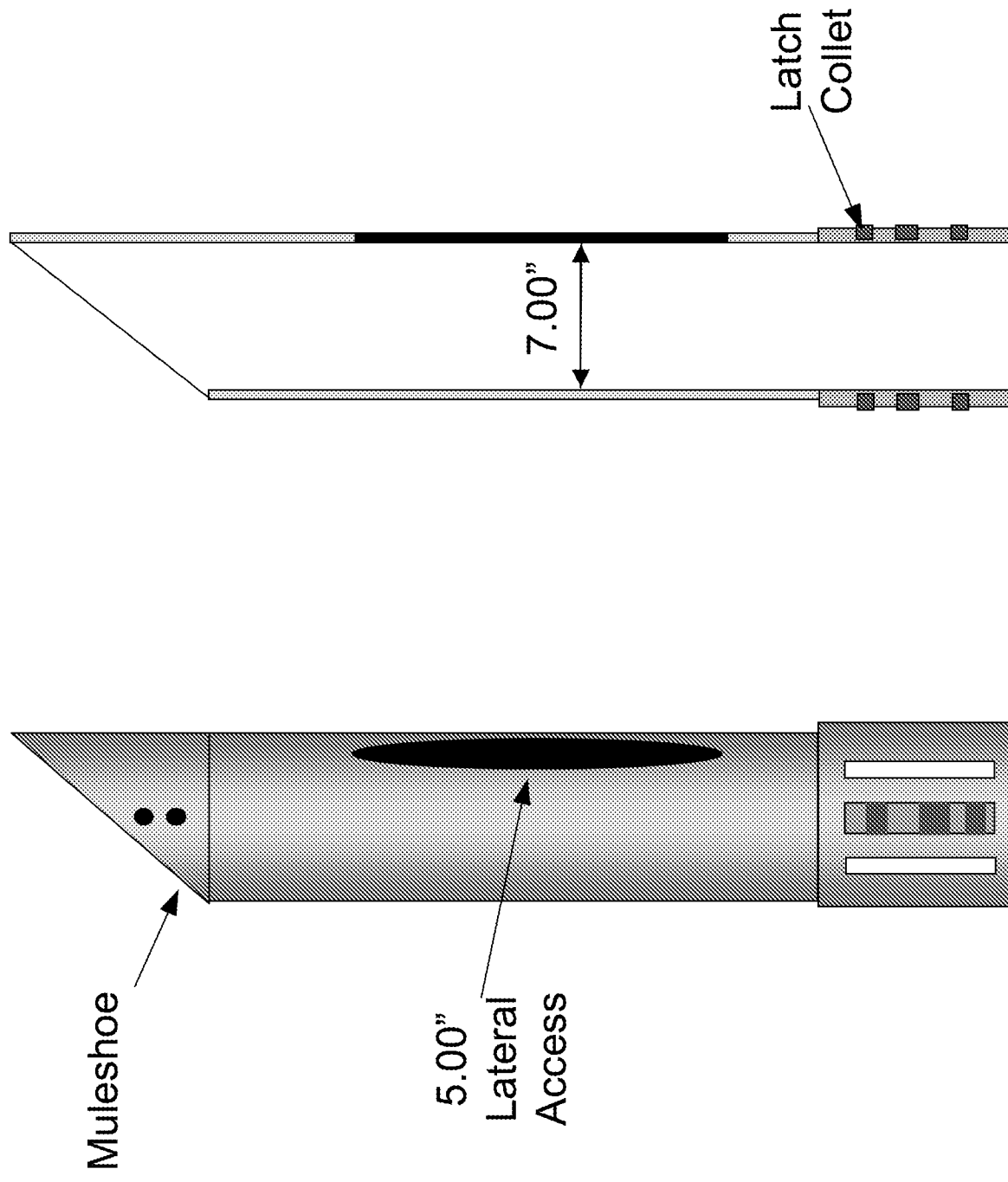
972-516-0030 (phone)

972-516-0608 (fax)

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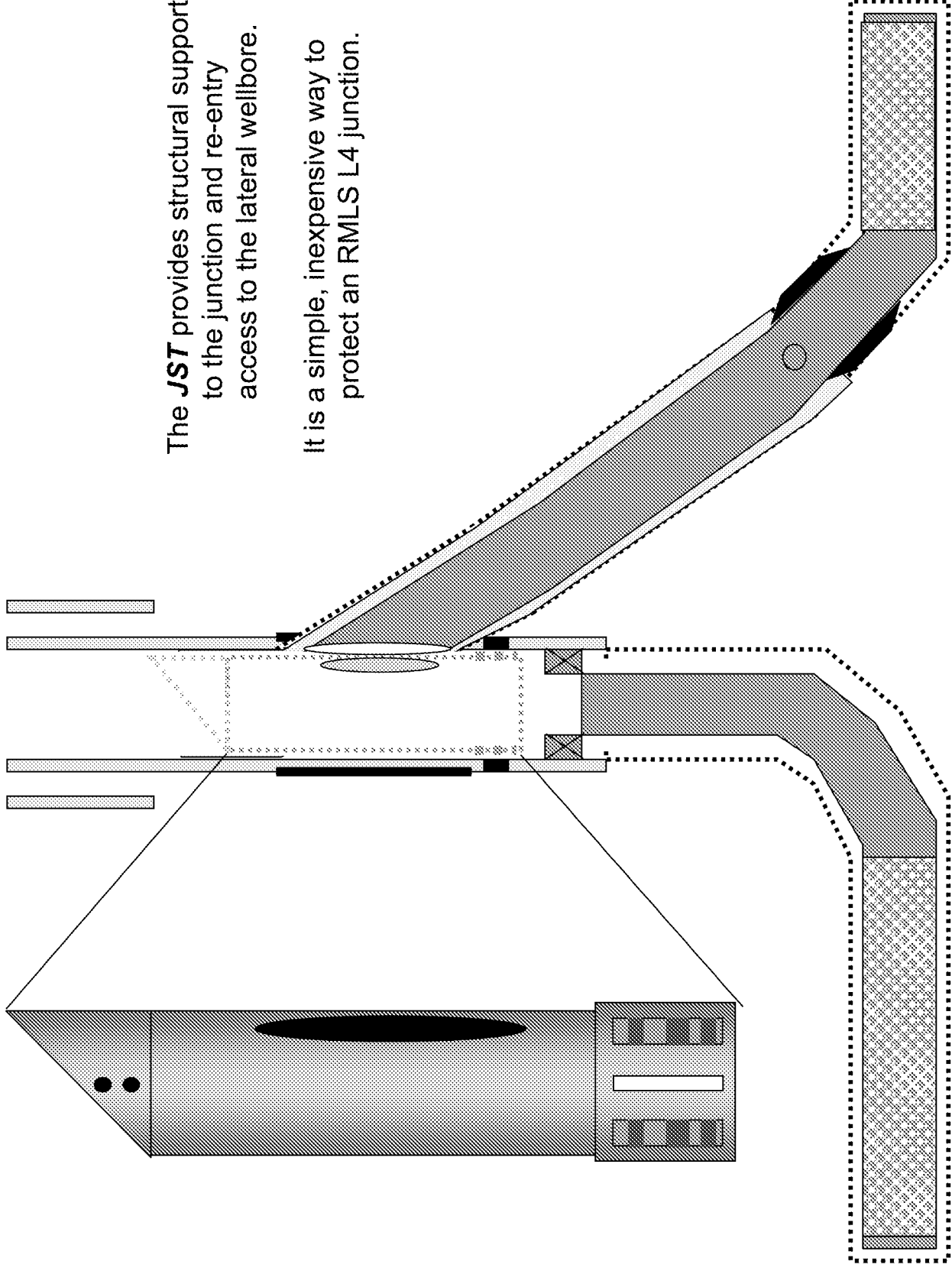
***EXHIBIT B***

# Junction Support Tool (JST)

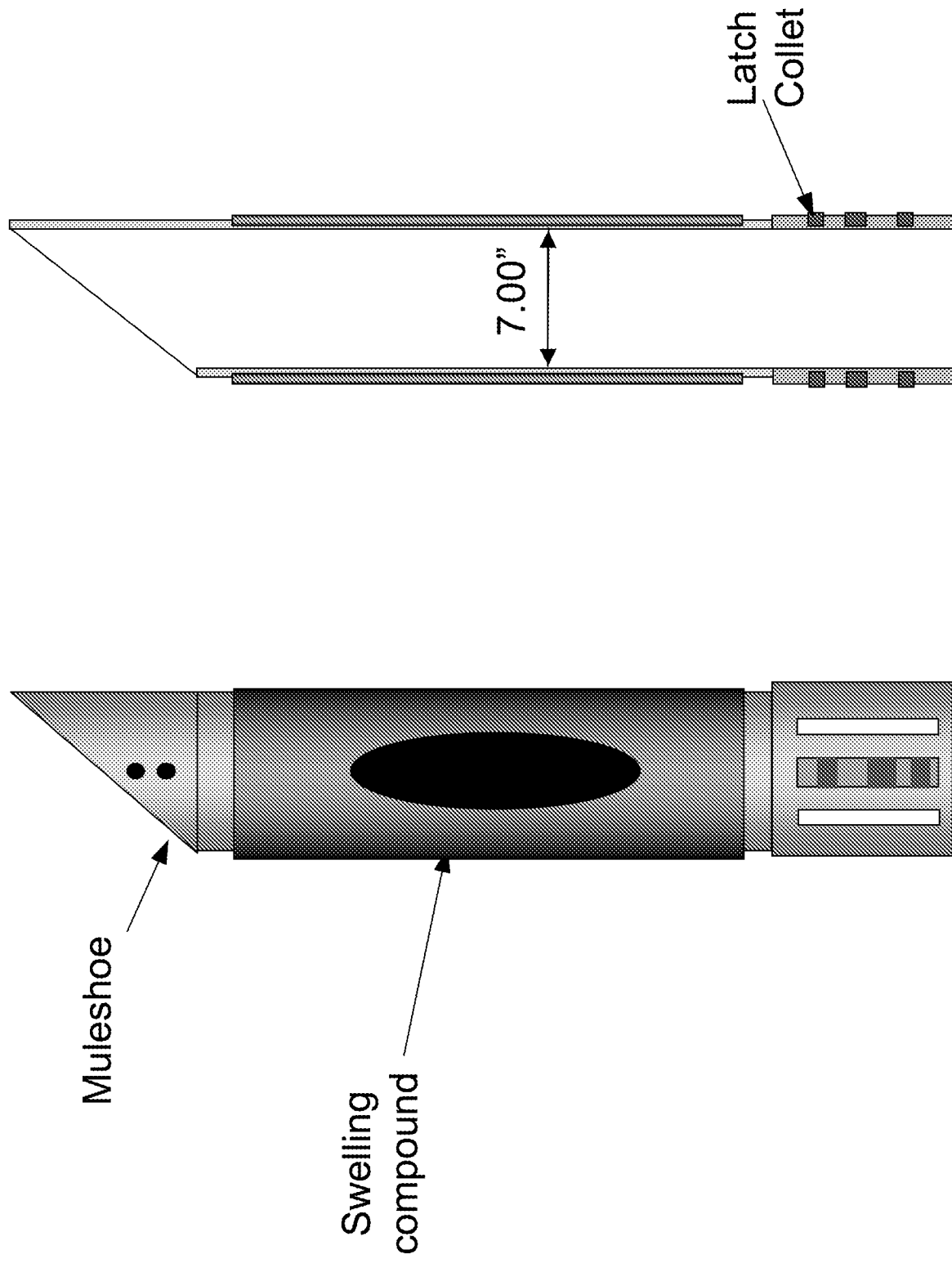


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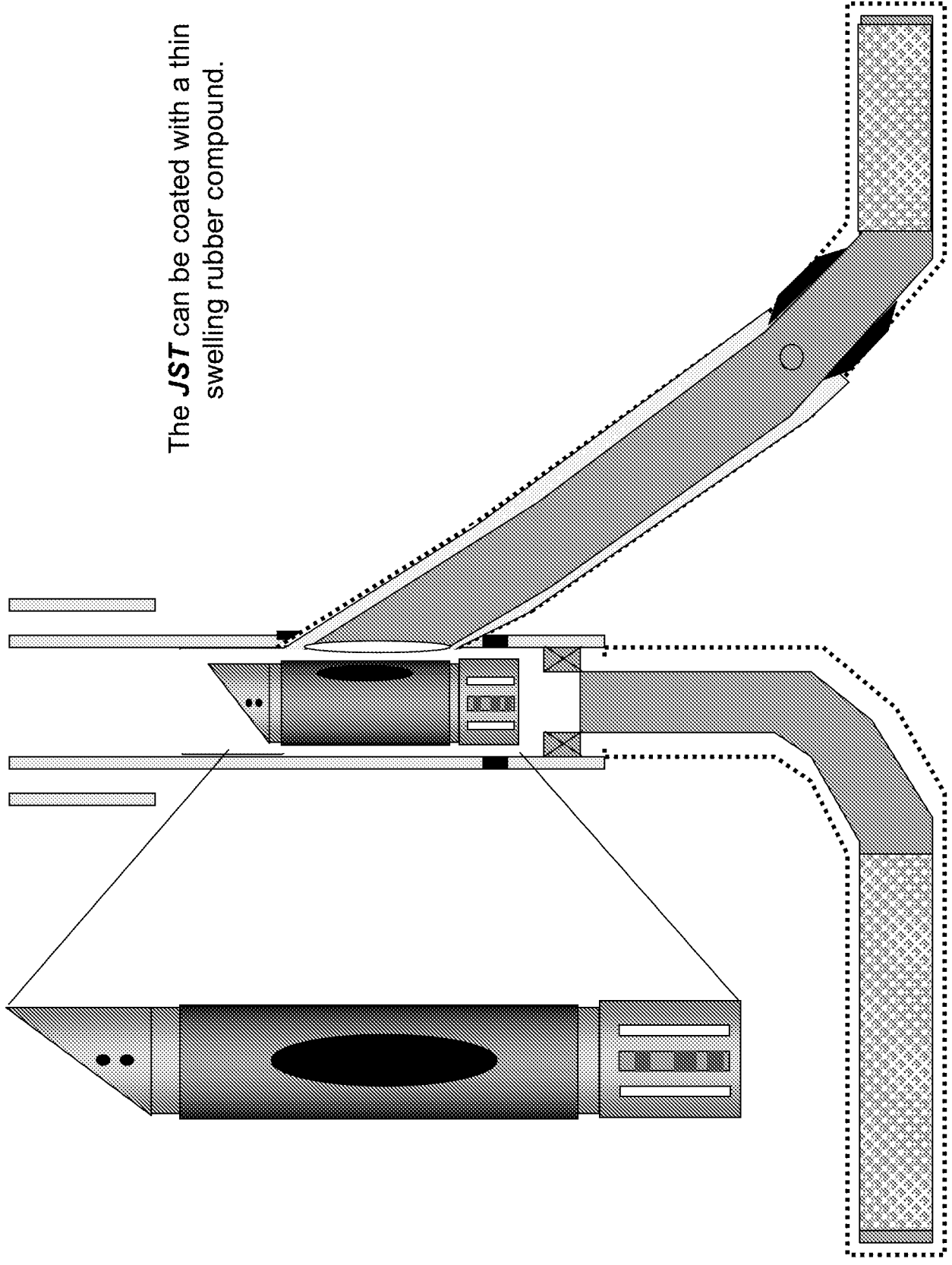
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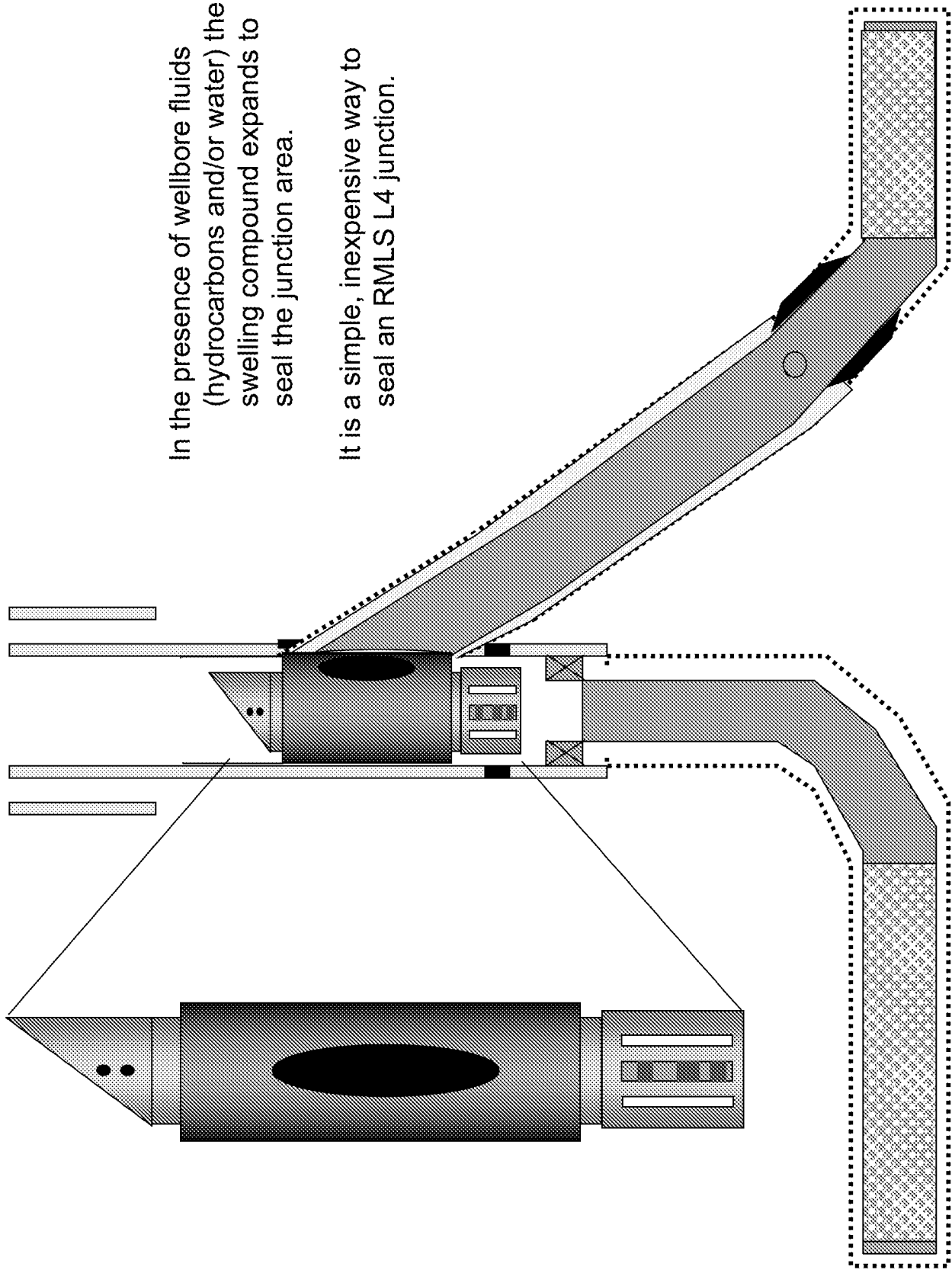


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